

Specification 5100-380d
September 1996
Superseding
Specification 5100-380c
February 1980

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SPECIFICATION FOR
VALVE, WYE

1. SCOPE.

1.1. Scope. The wye valve described in this specification is designed for use in fire hose lays, in order to branch two separate lines using valve controls. The inlet end is a female threaded swivel and the outlet ends are male threaded adapters. Working pressure is up to 600 psig (4137 kPag).

2. APPLICABLE DOCUMENTS.

2.1. Government Documents. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those in effect on the date of the invitation for bids or request for proposals (see 6.2).

USDA Forest Service Standard

5100-190 - Threads, Gaskets, Rocker Lugs, Connections and Fittings, Fire Hose

Copies of USDA Forest Service Standards are available from USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198.

2.2. Non-Government Publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those in effect on the date of the invitation for bids or request for proposals.

American National Standards Institute (ANSI)/American Society for Quality Control (ASQC)

Z 1.4 - Sampling Procedures and Tables For Inspection by Attributes

Address requests for copies to American National Standards Institute Inc., 11 West 42nd Street, New York, NY 10036.

Beneficial comments, recommendations, additions, deletions and any pertinent data that may be used in improving this document should be addressed to: USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198 by using the Specification Comment Sheet at the end of this document or by letter.

American Society for Testing and Materials (ASTM)

- B 26 - Aluminum-Alloy Sand Castings
- B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes
- B 241 - Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube
- D 570 - Test Method for Water Absorption of Plastics
- D 635 - Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
- D 638 - Test Method for Tensile Properties of Plastics
- D 785 - Test Method or Rockwell Hardness of Plastics and Electrical Insulating Materials
- E 380 - Practice for Use of the International System of Units

Address requests for copies to American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

Non-Government standards and other publications normally are available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.

2.3. Order of Precedence. In the event of conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS.

3.1. Qualified Products List Number. The bidder shall possess a currently valid notice of qualification with associated Qualified Products List (QPL) number obtained in accordance with 4.1. The date of issue on the QPL number shall precede the date on the invitation for bids.

3.2. Construction. The wye valve shall consist of a main body with a swiveled inlet and two evenly divided branch outlets. Each branch shall be independently gated with ball valves. The inlet end shall be a female threaded swivel and the outlet ends shall be male threaded adapters. Components shall be as shown in Figure 1. Figure 1 is provided for information only and is not intended to designate a particular design or manufacturer.

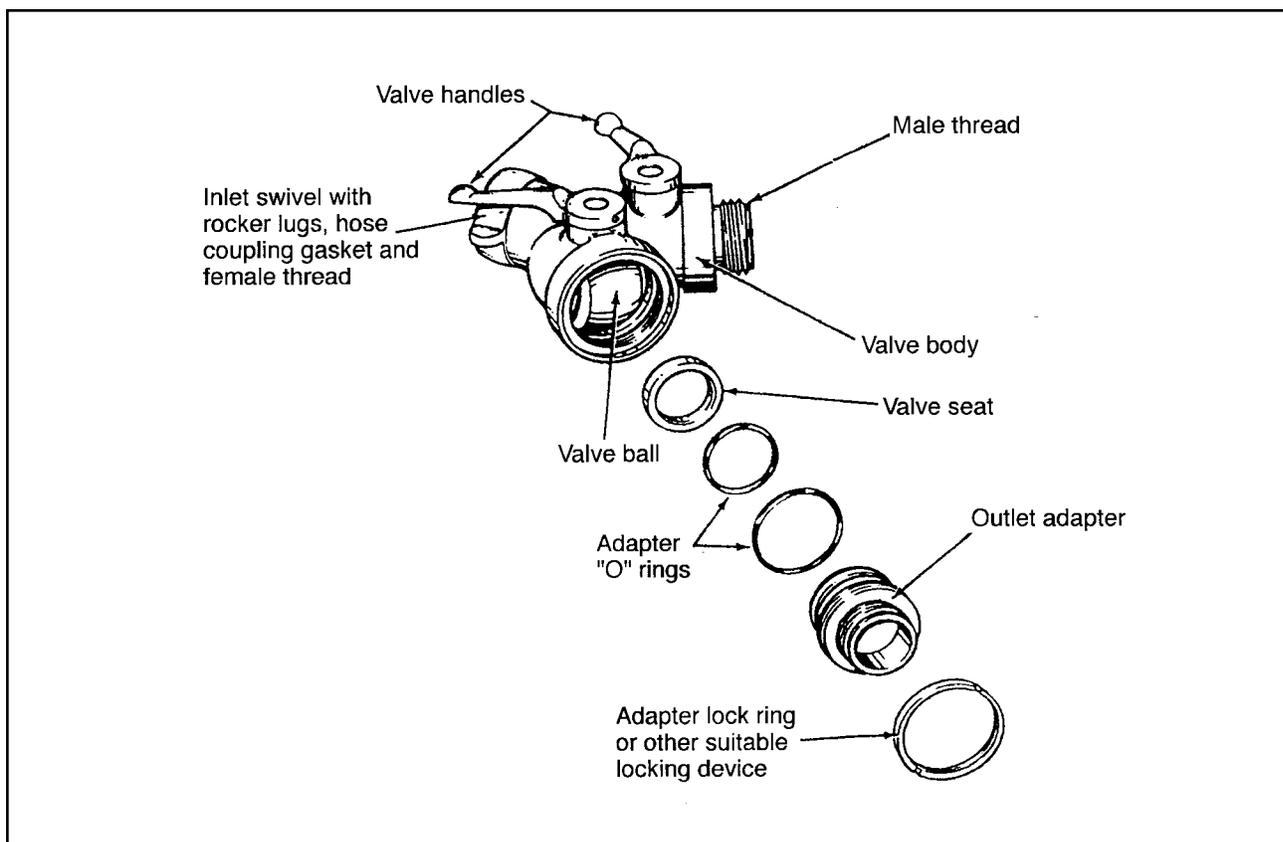


Figure 1. Wye valve configuration.

3.2.1. Valve and Components. The valve design shall include a system that shall allow for valve seat wear-leakage adjustments. The lock ring (or other locking device), outlet adapter, "O" rings, valve seat, and ball shall be removable for repair or replacement of damaged parts. Each valve shall have two positions set by mechanical stops, one closed and one fully open. There shall be 90° of travel between these two positions.

3.2.2. Swivel. The inlet swivel shall be designed with a tolerance to permit free turning by a light twisting action before and after the proof pressure testing, as required in 3.10.3.

3.2.3. Handles. The handles shall be parallel with the central axis of the outlet waterway when in the fully open position. The waterway shall not be obstructed in any way by the ball when fully open. Handles shall be removable for repair or replacement of damaged parts.

3.3. Materials. Where more than one type of material is used in various components, there shall be no incompatibility between materials which may cause corrosion.

3.3.1. Body, Swivel, Adapter and Lock Ring Material. The body, swivel, adapter and adapter lock ring (or other locking device) material shall conform to the following:

- a. Extruded aluminum alloy, 6061-T6, in accordance with ASTM B 221 and B 241 or
- b. Cast aluminum alloy, 356-T6, in accordance with ASTM B 26.

3.3.2. Ball Shaft Material. Ball shaft material shall be hard anodized extruded aluminum, in accordance with ASTM B 221 and B 241 or stainless steel.

3.3.3. Valve Ball Material. Valve ball material shall be an extruded aluminum alloy, 6061-T6, in accordance with ASTM B 221 and B 241, stainless steel or plastic.

3.3.3.1. Plastic Valve Ball Material. If plastic valve ball material is used, it shall meet the minimum physical properties indicated in Table 1, when tested in accordance to 4.6.4.1.

Table 1. Plastic Valve Ball Material Physical Properties

Physical Properties	Values
Tensile strength at yield	8000 psig at 73 °F (60.7 MPa at 22.8 °C)
Elongation at break	60% at 73 °F (22.8 °C)
Rockwell hardness	M 80
Water absorption (24h immersion)	0.22% at 73 °F (22.8 °C)
Flammability	1.1 in/min (27.9 mm/min)

3.3.4. Handles. Handle material shall conform to the following:

- a. Cast aluminum, 356-T6, in accordance with ASTM B 26 or
- b. Extruded aluminum, 6061-T6, in accordance with ASTM B 221 and B 241 or
- c. Rolyar ED 65 plastic.

3.3.5. Gasket Material. Gasket material physical properties shall meet the requirements of USDA Forest Service Standard 5100-190.

3.3.6. Lubrication. If lubrication is used, a permanent type shall be applied which shall not require replacement except when repairing or replacing the balls or seals. The lubrication shall not collect dirt or grit that may cause damage to the balls or seals, or affect performance of the valve.

3.3.7. Recoverable Materials. The contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR), provided all performance requirements of this specification are met.

3.4. Size, Dimension and Weight. Wye valve sizes are in three combinations of one inlet and two outlets as indicated in Figure 1 and Table 2. The acquisition document will specify the inlet and outlet combination type A, B, or C. Wye valve dimensions and weights shall be as indicated in Table 2.

Table 2. Wye Valve Dimensions and Weight

Type	Inlet and Outlet Combination		Maximum Weight		Valve Waterway			
	Inlet Thread Series	Outlet Thread Series	lb	kg	Size inch	Size mm	Tolerance inch	Tolerance mm
A	1 inch 11-1/2 NPSH	1 inch 11-1/2 NPSH	3.0	1.36	1.000	25.4	+0.030	+0.762
							-0.010	-0.254
B	1-1/2 inch 9 NH	1 inch 11-1/2 NPSH	3.25	1.47	1.000	25.4	+0.030	+0.762
							-0.010	-0.254
C	1-1/2 inch 9 NH	1-1/2 inch 9NH	5.0	2.27	1.500	38.1	+0.030	+0.762
							-0.135	-3.429

3.4.1. Handle Dimensions. Handles shall be a minimum of 3.5 inches (88.9 mm) and a maximum of 5.0 inches (127.0 mm) in length, as measured from the pivot point to their extreme ends.

3.4.2. Dimensional Tolerance. Unless otherwise noted, the following tolerances apply: one place (x.x) +/- 0.1 inch (2.5 mm); two places (x.xx) +/- 0.01 inch (0.25 mm) and three places (x.xxx) +/- 0.010 inch (0.254 mm).

3.5. Workmanship. Workmanship shall be equal to the best commercial practices consistent with the highest engineering standards in the industry and shall be free from any defect which may impair serviceability or detract from the product's appearance.

3.5.1. Symmetry. All metal part sections shall be symmetrical and concentric to 0.030 inch (0.762 mm).

3.5.2. Forged or Extruded Components. Forged and extruded sections shall be free from laps, sharp die marks, cracks or other defects.

3.5.3. Cast Components. Cast parts shall be fine-grained, free from blowholes, pinholes, pits, porosity, hard spots, shrinkage, cracks or other defects.

3.5.4. Plastic Components. All plastic or rubber parts shall be fully and completely formed from the mold. There shall be no blisters, pinholes, pits, sink marks, crazing, wrinkles, voids, foreign material or cracks in plastic material, or other defects.

3.6. Threads, Waterways, Gaskets, Gasket Recesses and Rocker Lugs. All threads, waterways, gaskets, gasket recesses and rocker lugs shall be in accordance with USDA Forest Service Standard 5100-190.

3.7. Markings. Markings shall be in accordance with USDA Forest Service Standard 5100-190. In addition, markings shall include the letters "600 WP" and shall be visible from the top of the valve, ignoring any obstruction by the handles.

3.8. Surface Treatment. Aluminum-alloy surfaces, to include threaded surfaces, shall be hardcoated in accordance with USDA Forest Service Standard 5100-190.

3.9. Surface Finish. The finish for all surfaces, to include threaded surfaces, shall be in accordance with USDA Forest Service Standard 5100-190.

3.10. Performance.

3.10.1. Valve Handle Dry Torque. When tested in accordance with 4.7.2, the torque required to open or close the branch handles of the valve ball in a dry condition shall not exceed 150 inch-pounds (16.95 N•m).

3.10.2. Valve Handle Wet Torque. When tested in accordance with 4.7.3, the torque required to open or close the branch handles of the valve ball while under 600 psig (2758 kPag) pressure shall not exceed 200 inch-pounds (22.60 N•m).

3.10.3. Proof Pressure. When tested in accordance with 4.7.4, the valve shall withstand a hydrostatic working pressure of 600 psig (4137 kPag) and a hydrostatic proof pressure of 1200 psig (8274 kPag), with no leaks, permanent deformation, mechanical damage or structural failure. In addition, the swivel section shall turn freely before and after proof pressure testing.

3.10.4. Handle Uniform Loading. When tested in accordance with 4.7.5, the wye valve handle shall be capable of withstanding a minimum uniform loading of 175 pounds (79 kg) applied at a rate of 2.0 inches per minute (50.8 mm/min), at a cross section located 3.0 inches (76.2 mm) from the pivot axis.

3.11. Metric Products. Metric dimensions are provided for information only, inch-pound units shall be the required units of measure for this specification. Thread series designations are indicated as 1 inch 11-1/2 NPSH and 1-1/2 inch 9 NH. Since these are thread series designations, not an indication of specific dimensions, the metric equivalents are not given. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within the tolerances specified using conversion tables contained in the latest revision of ASTM E 380, and all other requirements of this specification are met.

4. SAMPLING, INSPECTION, AND TEST PROCEDURES.

4.1. Qualification Testing.

4.1.1. Manufacturer Submission for Qualification Tests. The prospective contractor shall provide, without cost to the Government:

- a. Five complete sets or one reproducible set of detailed dimensional drawings and specifications.
- b. One sample wye valve.
- c. The estimated test fee. Contact the Water Handling Project Leader at the USDA Forest Service, San Dimas Technology and Development Center (SDTDC), 444 East Bonita Avenue, San Dimas, CA 91773.
- d. A signed collection agreement. Contact the SDTDC Water Handling Project Leader for a copy of the form.
- e. All of the above items shall be delivered to the attention of the SDTDC Water Handling Project Leader.

The Government shall not be responsible for the submitted test samples.

4.1.2. Qualification Test. Qualification inspection and tests shall be conducted by the Government and at the expense of the contractor at a fee to be determined by the Government. If requested by the contractor, the Government will inform the contractor of the date and place of inspection and tests. The contractor may send a representative (who has been designated in writing) to be present and observe the inspection and tests, but they shall not be permitted to be a participant. Upon completion of tests, the sample shall be retained by the Government. Qualification testing shall stop on a single failure and the test sample rejected. The contractor will be informed as to the nature of the failure. The Government shall not be obligated to continue testing a defective item once it is known to be defective or when it is considered to be in the best interest of the Government.

4.1.3. Notice of Qualification. Notice of Qualification shall be issued to the contractor upon the successful completion of qualification tests. Copies of qualification notices shall be provided to the USDA Forest Service Aviation and Fire Management, and Engineering in Washington, DC; and General Services Administration. A copy shall be retained in the SDTDC file.

4.1.4. Notice of Failure to Qualify. The contractor shall be notified by letter of failure to qualify when the wye valve does not meet the requirements of this specification.

4.1.5. Re-qualification. After qualification, if any changes are made in the product or where it is manufactured, the contractor shall notify the SDTDC immediately in writing. The need for re-qualification shall be determined by the Government when there are changes to the product or this specification.

4.2. General Inspection and Tests. Unless otherwise specified in the contract or purchase order, the contractor is responsible for performance of all inspection requirements prior to submission for Government acceptance inspection and tests. The contractor may utilize their own facilities or any commercial laboratory acceptable to the Government. Inspection records of the examination and tests shall be kept complete and available to the Government.

4.2.1. Inspection and Test Site. The Government shall conduct lot acceptance inspection and tests to determine compliance with the specification. If lot acceptance and tests are conducted at locations other than the manufacturing facilities, the contracting officer shall specify location and arrangements. In the case of on-site inspections at the contractor's facility, the contractor shall furnish the inspector all reasonable facilities for their work. During any inspection, the inspector may take from the lot one or more samples and submit them to an independent test laboratory approved by the Government or to a Government test facility for inspection and tests.

4.2.2. Testing With Referenced Documents. The contractor is responsible for insuring that components and materials used were manufactured, examined and tested in accordance with referenced specifications and standards. The Government reserves the right to perform any of the inspections or tests set forth in this section where such action is deemed necessary to assure supplies and services conform to prescribed requirements. All inspection or testing of a sample shall stop upon a single failure and the sample rejected. The contractor will be informed as to the nature of the failure. The Government shall not be obligated to continue testing a defective item once it is known to be defective or when it is considered to be in the best interest of the Government.

4.3. Responsibility for Compliance. All items shall meet all requirements of sections 3 and 4. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.4. Sampling for Inspection. When inspection is performed, sampling shall be in accordance with ANSI/ASQC Z 1.4.

4.4.1. Lot. All wye valves of one size presented together in one delivery shall be considered a lot for the purpose of inspection. A sample unit shall be one wye valve.

4.4.2. Sampling for Visual and Dimensional Examination. Sampling for visual and dimensional examination shall be S-3, with an Acceptable Quality Level (AQL) of 2.5 percent defective.

4.4.3. Sampling for Lot Acceptance Tests. Sampling for lot acceptance testing shall be S-3 with an AQL of 2.5 percent defective.

4.5. Inspection and Tests.

4.5.1. Visual and Dimensional Examination. When selected in accordance with 4.4.2, each sample wye valve shall be visually and dimensionally examined to determine conformance with this specification. Visual or dimensional defects shall be classified as a major or minor. A defect not listed in Table 3 shall be classified as a minor defect. If the number of defects in any sample exceeds the indicated AQL, the lot shall be rejected.

Table 3. Major and Minor Defects

Defect	Classification	
	Major	Minor
1. Wye valve not complete.	X	
2. Swivel too loose or too tight.	X	
3. Dimensions and weight not as required.	X	
4. Threads, waterways, gaskets, gasket recess and rocker lugs not as required.	X	
5. Material not as required.	X	
6. Workmanship and finish not as required.	X	
7. Thread dimensions not within specified tolerances and failure to pass the gage tests.	X	
8. Lubrication not permanent type.	X	
9. Threads not smooth, or otherwise free of imperfections.		X
10. Illegible or improper marking.		X

4.5.2. Lot Acceptance Tests. Each of the samples selected in accordance with 4.4.3, shall be tested in accordance with 4.7, to determine conformance with the requirements of this specification.

4.5.3. Quality Conformance Inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with ANSI/ASQC Z 1.4. The inspection level and AQL shall be as specified in 4.4.3.

4.6. Certificate of Conformance. A Certificate of Conformance shall meet the requirements of USDA Forest Service Standard 5100-190. Where certificates of conformance are required, the Government reserves the right to verify test any such items to determine the validity of certification. These certificates shall be based on the testing of component materials and may be performed by the component material supplier. The contractor shall provide certificates of conformance for 3.3.1, 3.3.2, 3.3.3, 3.3.3.1, 3.3.4, 3.3.5 and 3.8 (see 4.6.2, 4.6.3, 4.6.4, 4.6.4.1, 4.6.5, 4.6.6 and 4.6.7).

4.6.1. Certificates of Conformance in Lieu of Testing. Unless otherwise specified, certificates of conformance may be acceptable in lieu of testing end items.

4.6.2. Body, Swivel, Adapters and Lock rings. As required by 3.3.1, body, swivel, adapter, adapter lock ring (or other locking device) material shall meet the indicated physical property requirement listed, when tested to the defined test method.

4.6.3. Ball Shafts. As required by 3.3.2, ball shaft material shall meet the indicated physical property requirement listed, when tested to the defined test method. If stainless steel is used, the type of stainless steel shall be identified.

4.6.4. Valve Ball. As required by 3.3.3, valve ball material shall meet the indicated physical property requirement listed, when tested to the defined test method. If stainless steel is used, the type of stainless steel shall be identified. If plastic is used, see 4.6.4.1.

4.6.4.1. Plastic Valve Ball. As required by 3.3.3.1, if the valve ball material is plastic, the minimum physical properties shall meet the requirements in Table 1 when subjected to the ASTM Test Methods in Table 4.

Table 4. Plastic Valve Ball Physical Properties Test Methods

Properties	Test Method
Tensile strength	ASTM D 638
Elongation	ASTM D 638
Rockwell hardness	ASTM D 785
Water absorption	ASTM D 570
Flammability	ASTM D 635

4.6.5. Handles. As required by 3.3.4, handle material shall meet the indicated physical property requirement listed, when tested to the defined test method. If Roylar ED 65 Plastic is used, it shall be identified as such.

4.6.6. Gasket Material Test. As required by 3.3.5, gasket material physical properties shall meet the requirements of USDA Forest Service Standard 5100-190.

4.6.7. Surface Treatment. As required by 3.8, aluminum-alloy surfaces shall be hardcoated in accordance with USDA Forest Service Standard 5100-190.

4.7. Performance Testing. Samples shall be subjected to the following tests to determine if the samples meet the requirements of this specification.

4.7.1. Fluid Medium. All testing requiring the use of a fluid medium will be performed using municipally supplied potable water; this shall include, but is not limited to, torque testing and pressure testing. If the contractor does not have access to a municipal water supply, the testing shall be performed using any clear fresh water normally available for firefighting. Qualification testing performed by the Government shall be conducted using municipally supplied potable water.

4.7.2. Dry Valve Torque Test. As required by 3.10.1, the wye valve shall be dry and without hydrostatic pressure when dry torque tested. A calibrated torque wrench shall be installed in the place of each valve handle, and each valve opened and closed three times with no failures.

4.7.3. Wet Valve Torque Test. As required by 3.10.2, the wye valve shall be connected to a water pressure source and 600 psig (4137 kPag) pressure shall be applied for wet torque testing. The rate for applying pressure shall be not less than 300 psig (2068 kPag) per minute, and not more than 600 psig (4137 kPag) per minute, i.e. a uniform rate over a 1 to 2 minute period. The ball valves shall be closed. A calibrated torque wrench shall be installed in the place of each valve handle and each valve opened and closed three times with no failures.

4.7.4. Proof Pressure Test. As required by 3.10.3, the wye valve shall be tested for proof pressure. The swivel section shall turn freely before and after proof pressure testing.

A hydrostatic pressure of 600 psig (4137 kPag) shall be applied and held for three minutes. The rate for applying hydrostatic pressure shall not be less than 300 psig (2068 kPag) per minute, and not more than 600 psig (4137 kPag) per minute, i.e. a uniform rate over a 1 to 2 minute time interval. There shall be no leaks, permanent deformation, mechanical damage or structural failure.

Increase the hydrostatic pressure to 1200 psig (8274 kPag) and hold for three minutes. The rate for increasing hydrostatic pressure shall not be less than 300 psig (2068 kPag) per minute, and not more than 600 psig (4137 kPag) per minute, i.e. a uniform rate over a 1 to 2 minute time interval. There shall be no leaks, permanent deformation, mechanical damage or structural failure.

Decrease the hydrostatic pressure to 600 psig (4137 kPag) and hold for three minutes. The rate for reducing hydrostatic pressure shall be not less than 300 psig (2068 kPag) per minute, and not more than 600 psig (4137 kPag) per minute, i.e. a uniform rate over a 1 to 2 minute time interval. There shall be no leaks, permanent deformation, mechanical damage or structural failure.

4.7.5. Handle Uniform Load Test. As required by 3.10.4, the wye valve handle shall be capable of withstanding a minimum uniform loading of 175 lb (79 kg) applied at a cross section located 3.0 inches (76.2 mm) from the pivot axis. A wye valve handle shall be subject to a uniform load test as follows:

- a. The wye valve handle shall be rigidly mounted in a test stand fixture, where it is supported at the pivot axis in a cantilever manner. The mounting of the wye valve handle to the test stand fixture shall be in a mode identical to the handle mounting on the wye valve body.
- b. The handle shall be subjected to uniform loading to a minimum of 175 lb (79 kg). The rate for uniform loading shall be 2.0 in/min (50.8 mm/min).
- c. The load shall be applied parallel to the handle pivot axis, as a line contact at a cross section located 3.0 inches (76.2 mm) from the pivot axis. Structural failure shall be defined as an abrupt decrease in the uniform load value.

5. PACKAGING, PACKING AND MARKING.

5.1. Packaging, Packing and Marking. The packaging, packing and marking shall be as specified in the contract or order.

6. NOTES.

6.1. Intended Use. The wye valve described in this specification is used in fire hose lays for branching into two separate lines with valve controls, used in wildland firefighting activities.

6.2. Acquisition Requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Inlet and outlet combination types: Type A, Type B, Type C.
- c. If certificates of conformance are acceptable in lieu of lot by lot testing (4.5.2 and 4.6).
- d. Packaging, packing and marking (see 5.1)

6.3. Qualification. The contracting officer should verify that the bidder possesses a currently valid notice of qualification with associated Qualified Products List (QPL) number obtained in accordance with 4.1. This QPL shall have already been obtained with a date of issue prior to the date of invitation for bids.

6.4. Notice. When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever.

6.5. Preparing Activity. USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198.

United States Department of Agriculture, Forest Service
Standardization Document Improvement Proposal

Instructions: This form is provided to solicit beneficial comments which may improve this document and enhance its use. Contractors, government activities, manufacturers, vendors, or other prospective users of this document are invited to submit comments to the USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, California 91773-3198. Attach any pertinent data which may be of use in improving this document. If there is additional documentation, attach it to the form and place both in an envelope addressed to the preparing activity. A response will be provided when a name and address are included.

Note: This form shall not be used to submit request for waivers, deviation, or for clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

Standard Number and Title: **Specification 5100-380d, Valve, Wye.**

Name of Organization and Address:

_____ Vendor _____ User _____ Manufacturer

1. _____ Has any part of this document created problems or required interpretation in procurement use?
 _____ Is any part of this document too rigid, restrictive, loose or ambiguous?
 _____ Please explain below.

Give paragraph number and wording:

Recommended change (s):

Reason for recommended change (s):

Remarks:

Submitted by: (Print or type name and address—Optional)

Telephone number:
(Optional)

Date:

USDA Forest Service
San Dimas Technology & Development Center
Attn: Water Handling Project Leader
444 East Bonita Avenue
San Dimas, California 91773-3198

Please fold and staple for mailing